

SL. BUDKINA, L. M.

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001651330005-7"

SLOBODKINA, N.L.

Osteoma of maxillary sinus in a child. Vest, oto-rin. 19 no.2:
113-114 Mr-Ap '57. (MLRA 10:6)

1. Iz otstreleniya bolezney ukha, gorla i nosa (zav. - dotsent
F.F.Malomish) detskoy bol'nitsy imeni F.E.Dzerzhinskogo, Moskva.
(MAXILLARY SINUS, neoplasms
osteoma in child (Eng))
(OSTEOMA, in inf. & child
maxillary sinus (Eng))

PARSHIKOV, Nikolay Alekseyevich; RAYKH, I.Ya., inzh., red.;
SLOBODKINA, T.N., red.; VELITSYN, B.L., tekhn. red.

[Use of precast concrete structures in the construction
of electric substations] Primenenie sbornogo zhelezobetona
pri sooruzhenii podstantsii. Moskva, Orgenergostroi, 1962.
(MIRA 16:9)

33 p.

(Preast concrete construction)
(Electric substations)

SLOBODKINA, Ye.S.

Heat transfer calculations in construction engineering. Inzh. -fiz.
zhur. 5 no.10:97-99 0 '62. (MIRA 15:12)

1. Energeticheskiy institut AN BSSR, Minsk.
(Heat-Transmission) (Building)

SLOBODKINA, Ye.S.

Number of special code combinations. Sbor. trud. Inst. mash. i avtom.
AN BSSR no. 1:138-140 '61. (MIRA 16:5)
1** (Series)

SLOBODNIK, B.Ye., inzhener.

Горьковский машиностроительный завод

Automatic reclosing circuit with a reconstructed time relay of the
RV-73 type. Elek.sta. 25 no.3:53-55 Mr '54. (MLRA 7:6)
(Electric switchgear)

SLOBODNIK. E.Ye.

Orthopedic methods for treating closed bite. Stomatologiya 37 no.1:
60-63 Ja-~~J~~ '58. (MIRA 11:3)

1. Iz 1-y gorodskoy stomatologicheskoy polikliniki (glavnnyy vrach
L.M.Perzashkevich, nauchnyy rukovoditel' - prof. I.S.Rubinov)
Lengorzdavotdela.
(ORTHODONTIA)

SLOBODNIK, E.Ye.

Orthodontic method of creating a natural fixed bite by Rubinov's
method. Trudy LSGMI 63:128-132 '60. (MIA 15:1)
(DENTAL PROSTHESIS) (ORTHODONTIA)

SLOBODNIK, E.Ye.

Characteristics of bite anomalies in twins. Trudy LSGMI 63:149-152
'60. (MIRA 15:1)
(TEETH ABNORMALITIES AND DEFORMITIES)

SLOBODNIK, M.A., inzh.

Automatic DL8A production line for the processing of bars.
Der.prom. 10 no. 12:22-23 D '61. (MIRA 14:12)
(Woodworking machinery)
(Assembly-line method)

SLOBODYAK, N. P.

"New method of analyzing processes of chemical sorption in packed columns."

Report presented at the 1st All-Union Conference on Heat- and Mass Exchange,
Minsk, BSSR, 5-9 June 1961

Совместное заседание с целью распространения знаний
А. В. Прокофьев, В. Ф. Губкин
Некоторые вопросы теории радиотехнического проекта
при распространении УКВ

А. В. Прокофьев, Г. Н. Соболев, Н. П. Логинов
Электромагнитные исследования радиотехнического проекта при замене тропосферы распространением УКВ
(с 12 до 16 часов)

В. Ф. Кистерус
Об интегральном методе обнаружения импульсного сигнала на фоне шума.

Н. А. Денисов
Погрешности измерения в температуре антенн
своей излучающей способностью

9 часов
(с 18 до 22 часов)
44

С. М. Дельцов (Челябинск)

Различные преобразования в некоторые из применений

Д. Г. Дарфилд

Расчет частотных характеристик некоторых спектральных многоканальных

Д. Е. Ванчен

К расчету передатчиков проектов при частотной модуляции.

10 часов
(с 10 до 16 часов)

Л. А. Маслов

Атомно-лучевые радиоспектры и молочные излучение

В. Б. Штаденштадтер,

Г. С. Никитин

Лазеродиодные и инторезонаторные квантовые устройства.

В. И. Туровер

К вопросу об основоположниках принципа распространенного усиления электромагнитных колебаний

45

report submitted for the Centennial Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VSEKBS), Moscow,
8-12 June, 1957.

Ю. В. Балашов

Анализ стиля шифрования при обмене текста

II. СЕКЦИЯ РАСПРОСТРАНЕНИЯ РАДИОВОЛН
Руководитель: Л. А. Жигулин

9 июня
(с 10 до 12 часов)

Совместное заседание с советской радиотехникой

А. В. Присяг,
Б. Ф. Губкин

Некоторые вопросы theory радиотехнического крипто-
при расширении распространения УКВ

А. В. Присяг,
Г. Н. Соловьев,
М. В. Грибов

Экспериментальное исследование различного при-
чина при дальних тропосферных распространении
УКВ

52

(с 12 до 16 часов)

В. А. Фоминский,
Н. А. Араман

О возможном методе усиления ультракоротких из-
менений при дальних тропосферных распространении
ультракоротких радиоволн

А. В. Шабданов

К вопросу о применении метода излучения при
изучении радиоизотропного распределения в эфире
со струями атмосферных разрядов

В. А. Каппер,
Ф. Г. Бак

К теории распространения радиоволн в среде со
случайным переломостоянием под действием природ-
ной влажности

9 июня
(с 16 до 22 часов)

А. В. Марк,
С. В. Бородин,
В. В. Григорьев

Физическая основа фронтов при распространении
дальнодействующих радиоволн над поверхностью зем-
ли

report submitted for the Centennial Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications Im. A. S. Popov (VKRUE), Moscow,
8-12 June, 1959

Slobodov, B. Ya.
USSR/Geophysics - Atmosphere

FD-1710

Card 1/1 : Pub. 45-10/12

Author : Slobodov, B. Ya., Cand. Phys. -Math. Sci. (reviewer)

Title : Criticism and bibliography. A. Kh. Khrgian, Fizika atmosfery, State Technical-Theoretical Literature Press, Moscow, 1953, 456 pp, 5000 copies, 13.20 rubles

Periodical : Izv. AN SSSR, Ser. geofiz., 84-85, Jan-Feb 1955

Abstract : The reviewer states that the book, Physics of the Atmosphere, somewhat makes up for deficiencies in the textbook literature on meteorology and supplements in an essential way the group of problems explained in previous editions of textbooks on meteorology. He points out a number of failings in the book.

Institution : -

Submitted : -

SLOBODOV, B.Ya.

Determination of geopotential altitudes, lability energy, and energy
reserve of circulation. Meteor. i gidrol. no.1:29-35 Ja '56.
(Atmosphere) (MIRA 9:6)

Slobodov, B. Yu.

Slobodov, B. Yu. Consideration of turbulent exchange in
the problem of distribution of pressure and wind in
the atmosphere. Izv. Akad. Nauk SSSR. Ser. Geofiz.
1956, 1001-1004. (Russian)

On connaît d'après les recherches de E. Blinova [C. R. (Dokl.) Acad. Sci. URSS (N.S.) 39 (1943), 257-260; MR 5, 194] les expressions de la pression moyenne et du vent moyen si l'on se donne d'avance la distribution des températures dans l'atmosphère. Dans ces recherches on néglige la turbulence et on considère l'atmosphère comme un fluide idéal barocline. D'autre part A. Mhitaryan [Izv. Akad. Nauk SSSR Ser. Geofiz. 1955, 80-83] a donné une méthode pour calculer l'échange turbulent vertical.

En utilisant ces recherches l'auteur généralise le problème en introduisant l'influence de l'échange horizontal macro-turbulent.

En utilisant 1) — l'équation vectorielle du tourbillon de Fridman, 2) — l'équation du mouvement d'Euler le long de la latitude ainsi que 3) — l'équation de continuité, l'auteur arrive, après un certain nombre de transformations, et en linéarisant les équations, à un résultat dont les cas limites sont les équations de Blinova et Mhitaryan.

M. Kiveliovitch (Paris).

1-FW

On the Problem of Determining the Gradient Wind

SOV/50-58-11-5/25

definitions of references 1, 3, 5 and 11. They are criticized in detail and compared with the exact definitions. The definition of reference 7 falls under the incorrect ones: "A wind is to be understood as a gradient wind if its formation occurs owing to unequal pressure distribution without participation of frictional forces". One could be induced to take this definition as relating to a quasi gradient wind, then the underlined words (printed in italics in the paper) are entirely superfluous. In connection with gradient winds, the meteorologic literature speaks often of vertical movements. It is quite obvious here that this holds true of a quasi gradient wind only. In case that a gradient movement would be possible in the atmosphere, there could never be any vertical movements or local pressure changes. There are 12 Soviet references.

Card 2/2

L. S. Gandin, D. L. Laykhtman, Ye. A. Sopots'ko,
M. V. Shlaneva "A Book of Mathematical Problems in the Field of Dynamic
Meteorology". Edited by D. L. Laykhtman, Gidrometeoizdat Publishing House
Leningrad 1957

SOV/50-59-2-20/25

of the Atmosphere and the Circulation Theorem. 26 tables
are attached. A similar book with easier problems for the
departments of geography would be desirable. It is recommended
to bring the solutions of more difficult problems or the way
in which they are solved. A list of corrigenda is attached.

Card 2/2

3 (7)
AUTHOR:Slobodov, B. Ya.

SOV/50-59-3-11/24

TITLE:

Changes in the Vertical Temperature Gradients and the Fluctuations of the Height of the Tropopause (Izmeneniya vertikal'nykh gradiyentov temperatury i kolebaniya vysoty tropopauzy)

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 3, pp 41 - 43 (USSR)

ABSTRACT: First, it is pointed out that the results of observations do not confirm the hypothesis on the substantiality of the tropopause (i.e. the assumption that the velocity with which the tropopause shifts is equal to the velocity of the air current). In continuation of the mentioned papers (Refs 1, 2) the opinion is expressed that the fluctuations of the height of the tropopause are influenced by the changes in the vertical temperature gradient. Therefore, the reasons for the change in the vertical temperature gradients in the atmosphere are investigated in this paper, i.e. the adiabatic factors bringing about these changes and thus also the fluctuations of the height of the tropopause are dealt with. For this purpose formula (5) is derived. The analysis of this formula shows that the local changes in the vertical gradient take place in adiabatic processes due to the following circumstances:

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Changes in the Vertical Temperature Gradients and the SOV/50-59-3-11/24
Fluctuations of the Height of the Tropopause

1) advection of the vertical temperature gradients (of the horizontal as well as of the vertical advection) 2) temperature advection 3) local pressure changes, 4) dependence of the vertical velocity component on the height. - Since the value of the vertical temperature gradient forms the main criterion in the determination of the height of the tropopause it is evident that in the adiabatic course of the processes the fluctuations of the height of the tropopause are due to the same reasons. - The mentioned reasons are then analyzed. The first summand of the right part of equation (5) shows how the vertical temperature gradient would change in the geographic area concerned at the corresponding height if the air mass would shift without deformation and without changing its state. It is demonstrated that only this summand is connected with the hypothesis of substantiality, the remaining 4 summands however, are in no relation with this hypothesis. - The second summand of the right part of equation (5) shows that the vertical gradients in the geographical area concerned change in the corresponding height also because velocity and temperature are functions of the height. The remaining three

Card 2/3

Changes on the Vertical Temperature Gradients and the SOV/50-59-3-11/24
Fluctuations of the Height of the Tropopause

summands need no further explanation. The graphically proved statement made by Krichak (Ref 2) that the tropopause rises or sinks according to the difference of the intensity in the vertical currents may be seen from the last summand. - It is pointed out that the fluctuations of the tropopause investigated here may be influenced also by non-adiabatic effects. - In conclusion, it is pointed to the error made by Volkonskiy (Ref 1) who states that the conditions of substantiality and those of the adiabatic state are adequate. There are 4 references, 2 of which are Soviet.

Card 3/3

SOV/49-59-10-17/19

AUTHOR: Slobodov, B. Ya.

TITLE: On Annual Movements of Activity Centres in the Turbulent
AtmospherePERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya
1959, Nr 10, pp 1522-1525 (USSR)ABSTRACT: Annual variations of the pressure distribution is
considered. The basic formulae, Eqs (1) to (3)
represent respectively the vertical component of
eddies equation, the equation of motion and the
equation of continuity. The functional relationships
between the index of circulation α , the Pole-Equator
temperature gradient M , the kinematic turbulent
friction γ and time are defined by Eqs (4) to (6). By
substituting these relationships into Eqs (1) to (3), the
function ϕ can be defined as Eqs (8) to (12). This
function can be represented in the form of the series
(13) to (15) from which, the system of Eqs (16) and
(17) can be derived with their coefficients defined as
Eqs (18) to (21). Thus the annual movements of active

Card 1/2

SOV/49-59-10-17/19

On Annual Movements of Activity Centres in the Turbulent Atmosphere

centres in the atmosphere can be expressed as Eq (22).
There are 4 Soviet references.

ASSOCIATION: Stavropol'skiy sel'skokhozyaystvennyy institut
(Stavropol Agricultural Institute) 

SUBMITTED: August 6, 1958

Card 2/2

SLOBODOV, B.Ya.

~~Analysis of height~~ fluctuations of the tropopause under the action
of nonadiabatic factors of variations in the vertical temperature
gradients. Izv. AN SSSR. Ser. geofiz. no.8:1289-1291 Ag '63.
(MIRA 16:9)

1. Predstavлено членом редакционной коллегии Известий АН СССР,
Серия геофизическая, И.А.Кибелеем.
(Atmosphere)

Armenian, 1950, Armenia.

"Trains and Stresses

Relieving pressure as a means of determining stresses operative in inter-chamber pillars of rock salt in the "Artemovskiy" mines, Trudy VNIIG, 22, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 1950, Uncl.
2

BILIK, Shaya Mendelevich; KORABLEV, Anatoliy Aleksandrovich; PANOV, Andrey Dmitrievich; SLOBODOV, Mikhail Aleksandrovich; KRIVOBOK, K.P., otv.red.; LOMILINA, L.N., tekhn.red.; ALADOVA, Ye.I., tekhn.red.

[Instruments and apparatus for studying mine pressure] Pribory i apparatura dlja issledovaniia proizvlenii gornogo davlenija; spravochnik. Moskva, Ugletekhizdat, 1958. 363 p. (MIRA 12:1)
(Mining engineering) (Measuring instruments)

SLOBODOV, M.A.

Using the unloading method to study stresses inside a rock mass.
Ugol' 33 no. 7:30-35 Jl '58. (MIRA 11:7)
(Subsidences (Earth movements))

SLOBODOVA, S.S.

Strangulated obstruction of the small intestine in pregnancy.
Khirurgiia no.4:83 Ap '55.

(MLRA 8:9)

1. Khirurgicheskoye otdeleniye 1-y Sovetskoy bol'nitsy Gomelya.
(PREGNANCY, COMPLICATIONS OF) (INTESTINES--OBSTRUCTION)

ZHMUDS'KIY, O.Z.; SLOBODS'KA, Z.Y.

Investigating the $K\alpha_1$, $K\alpha_2$ - emission spectral lines of Zn in
Zn--Ag alloys. Nauk. zap. Kiev. un. 9 no.2:65-70 '50. (MLRA 9:12)

(Zinc-Spectra) (Zinc-silver alloys)

SLOBODSKAYA, D.I.

Role of laboratories at cannning factories. Kons.i ov.prom. 15
no.3:37-38 Mr '60. (MIRA 13:6)

1. Belgorod-Dnestrovskiy rybokonservnyy zavod.
(Canning and preserving)
(Testing laboratories)

ALEKSEYEV, Mikhail Dmitriyevich; SLOBODSKAYA, Doroteya Isaakovna; KORZHOVA, Yu.,
spets. red.; MUKHINA, Ye.M., red.; FORMALINA, Ye.A., tekhn. red.

[Canning mackerel and saurel ~~in oil~~ in batch-type blanchers] Vyrabotka
konservov v masle iz skumbrii i stavridy v blanshirovateliakh pre-
ryvnogo deistviia. Moskva, Rybnoe khozaiistvo, 1961. 16 p.
(MIRA 14:9)

(Fish, Canned)

FLAUMENBAUM, B.L.; VALYAVSKAYA, M.Ye.; SLOBODSKAYA, D.I.

Elaboration of high temperature systems for sterilizing canned fish
in butter and tomato sauce. Izv. vys. ucheb. zav.; pishch. tekhn.
(MIRA 15:1)
no.5:66-70 '61.

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy
promyshlennosti. Kafedra tekhnologii konservirovaniya.
(Fish, Canned--Sterilization)

SLOBODSKAYA, D.L. [Slobods'ka, D.I.]

New types of canned food. Khar.prom. no.2:87-88 Ap-Je '62.
(MIRA 15:9)

1. Bazova laboratoriya Odes'kogo derzhribpromtrestu.
(Ukraine—Fish, Canned)

ANDRONIKOVA, Ye.L.; SLOBODSKAYA, E.D.

A list of M.A. Rykachev's works. Trudy GGO no.123:11-27
'61. (MIRA 14:8)

(Bibliography—Meteorology)
(Bibliography—Magnetism, Terrestrial)
(Rykachev, M.A.)

SLOBODSKAYA, G.A.

Second All-Union Conference on Photosynthesis. Fiziol.rast. 4 no.2:
218-219 Mr-Ap '57. (MLRA 10:5)
(Photosynthesis--Congresses)

NICHIPOROVICH, A.A.; SLOBODSKAYA, G.A.; KARPUSHKIN, L.T.

Formation of carbohydrates in photosynthesis at various
light intensities. Fiziol. rast. 10 no.4:405-415 Jl-Ag '63.
(MIRA 16:8)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy
of Sciences, Moscow.

SLOBODSKAYA, I. V.

USER/Physics
Spectra, Vibration
Optics

Sep/Oct 48

"Use of a Spectrophone for Determining the Rate of Conversion of Vibrational Energy of a Molecule Into Energy of Progressive Motion," I. V. Slobodskaya, State Opt Inst, 6 $\frac{1}{4}$ pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 5

Describes method in detail, with two sketches, one graph, and one table.

19/49F84

SLOBODSKAYA, Nadezhda Pavlovna; VALIKOVA, K., red.; FILIPPENKOVA, M.,
tekhn.red.

[Smolensk Ceramic Plant] Smolenskii keramicheskii. Smolensk,
Smolenskoe knizhnoe izd-vo, 1959. 88 p. (MIRA 13:6)

1. Zametitel' sekretarya partorganizatsii Smolenskogo kerami-
cheskogo zavoda (for Slobodskaya).
(Gnezdovo--Ceramic industries)

COMMON ELEMENTS

A new method of measurement of the probability ~~coeff.~~
of transitions based on the observation of an absorption
following a linear law. M. L. Vengerov and P. V. Slo-
bozhikova. *Bull. Acad. Sc. U.R.S.S., Ser. Phys.*,
1959, 11(1957). — In the case of very small absorption, the
energy ΔE absorbed by the gas and equal to $I_0 \int (1 -$
 $e^{-kds})ds$ can be set equal to $I_0 f K ds$ (k , absorption
function) = $I_0 N h s / 4 B_{1-2}$. Very small absorption can
be measured with the spectrophotometer (C.A. 39, 4778). By
making 2 measurements, one with a monochromator slit
set much wider than the absorption band and one with the
slit set narrower than the absorption band, it is possible to
eliminate I_0 and to obtain an expression for $\int k ds$. Meas-
urements were made with CO₂ and its infrared band at
20.7 μ . S. Pakswar

Mann

Mechanics

SLOBODSKAYA, P.V.

42058. SLOBODSKAYA, P.V.-Opredeleniye skorosti perekhoda kolegatel'noy energii molekyl v energiyu postupatel'nogo izzheniya s pomoshch'yu spektrofona. (Doklao i preniya). Izvestiya akademii Nauk SSSR. Seriya fiz., 1948, No. 5, s. 656-62. Bigliogr: 6 nazv.

So: Setopis' Zhurnal'nykh Statey, Vol. 47, 1948

*Ca**J*

Determination of the velocity of the transition from vibrational to translational energy of molecules with the aid of a spectrophotometer. P. V. Slobodskaya. *Izvot. Akad. Nauk S.S.R., Ser. Fiz.* 12, 630-61 (1948).--Radiation of a Nernst lamp is transmitted through a monochromator with KCl and CaF₂ prisms to a chamber filled with a mixt. of CO₂ and air and contg. a microphone. The radiation is modulated by a disk rotating at 250 cycles; the disk is synchronized with an interrupter which changes the microphone current into pulsed d.c. registered by a galvanometer. If the disk is synchronized in such a way that 2 equal parts of 2 opposing $\frac{1}{4}$ periods are covered, the galvanometer shows no deviation unless there is a time delay in the transformation of vibrational to translational energy. The displacement angle of the disk relative to the interrupter gives an abs. measure for this time delay. CO₂-air mixts. of different concns. were measured for $\lambda = 4.3$, 2.7, and 14.8 μ . For 100% CO₂ the durations of an excited quantum and the probabilities of nonelastic collisions were found to be: $\lambda = 4.3 \mu, t = 7 \times 10^{-4}$ sec., $p = 1.6 \times 10^{-4}$; $\lambda = 2.7 \mu, t = 4 \times 10^{-4}$, $p = 2.8 \times 10^{-4}$; $\lambda = 14.8 \mu, t = 1.6 \times 10^{-4}$, $p = 6.9 \times 10^{-4}$.

S. Pakswar

SOV/51-5-3-21/21

AUTHOR: Slobodskaya, P.V.

TITLE: A Spectrophone with Multiple Passage of Radiation (Spektrofon s mnogoizratnym prokhozhdeniyem radiatsii)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 342-343 (USSR)

ABSTRACT: Optico-acoustical receivers of infrared radiation may be used to determine the coefficient of probability of absorption and of relaxation time of vibrational molecular states (Refs 1-8). In such studies the gas under investigation is placed directly into the receiver chamber. The amplitude of the signal produced by the microphone in the receiver depends on the amount of energy absorbed by the gas, i.e. on the effective gas layer thickness. Increase of the absorbing layer thickness by lengthening the receiver does not increase the signal amplitude since, with increase of the receiver chamber volume, the mean amplitude of the temperature vibrations in the gas is decreased. The present paper describes a method of increasing the signal in studies of weak absorption bands which is based on the multiple passage of radiation in the receiver chamber. The chamber (2, in Fig 1) is in the form of a cylinder with its two ends

Card 1/2

SOV/51-5-3-21/21

. spectrophotometer with Multiple Passage of radiation

closed by mirrors. One mirror is spherical (3, in Fig 1), the other is plane (5, in Fig 1). There is a slit-like aperture in the middle of the spherical mirror which is covered by a plate (4, in Fig 1) transparent to infrared radiation. The paths of rays inside the chamber are shown in Fig 2. The described apparatus has the advantage of simplicity, but multiple passage of radiation inside the chamber may be also obtained by means of some other method, such as White's arrangement (Ref 9).

SUBMITTED: April 12, 1958

Card 2/2 1. Spectrum analyzers--Design 2. Spectrum analyzers--Equipment
 3. Gases--Spectra

SLOBODSKAYA, P.V.; GERLOVIN, Ya.I.; VEYNGEROV, M.L.

Phasometric opticoacoustic method for gas analysis. Trudy kom.
anal. khim. 8:252-257 '58. (MIRA 11:8)

1.Gosudarstvennyy opticheskiy institut im. S.I. Vavilova.
(Gases--Analysis)

AUTHOR:

Slobodskaya, P. V.

SOV/20-120-6-20/59

TITLE:

Spectrometer Method Development for the Determination of the Relaxation Time of the Excited Vibration State of Molecules
(Razvitiye metoda opredeleniya vremeni relaksatsii vozbuszhdennogo kolebatel'nogo sostoyaniya molekul s pomoshch'yu spektrofona)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 6,
pp 1238 - 1241 (USSR)

ABSTRACT:

In a previous paper the author developed a selective method for the determination of the relaxation time by means of the spectrophotometer by M.L.Veyngerov (Ref 2). This method permits to carry out a differentiated determination of this quantity for any type of molecule oscillation. This is a report on the further development of this method. In order to be able to determine the relaxation time the phase shift of a signal generated by an optical-acoustic receiver (which is filled with the gas under consideration) with respect to the signal of the reference voltage generator is measured. In this generator a photoelement is incorporated which is illuminated by light modulated synchronously with the signal received by the receiver. The following relation holds for the total phase shift of the first

Card 1/3

Spectrometer Method Development for the Determination SOV/2o-12o-6-2o/59
of the Relaxation Time of the Excited Vibration State of Molecules

harmonic of the signal from the output of the transmitter with respect to the first harmonic of the signal from the reference voltage generator: $\varphi = \varphi_1 + \varphi_2 + \varphi_3$, where φ_1 denotes the phase shift of the harmonic components due to the modification of the shape of the relaxation curve, φ_2 the phase shift due to the oscillations of the membrane of the microphone which records the fluctuations of the pressure and φ_3 the phase shift which is due to the unequal performance of the amplifier units of the receiver and of the photoelement and which is also due to the phase shift of the first harmonic of the signal from the photoelement with respect to the moment of radiation incidence upon the transmitter. Two methods for the elimination of the phase shift caused by the equipment are discussed. A diagram illustrates the relaxation times for the bands 4,3 and 4,7 μ of the molecules of a mixture of carbon dioxide and nitrogen measured by this method. The relaxation time versus concentration function is also presented in a diagram. The collisions of the CO₂ molecules with the nitrogen molecules are much less effective in the band with 4,3 μ than

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Spectrometer Method Development for the Determination SOV/20-120-6-20/59
of the Relaxation Time of the Excited Vibration State of Molecules

the collisions of the CO₂ molecules with each other. The author expresses her gratitude to Professor M.L.Veyngerov for guidance in the first stage of this work and for his interest shown in the further stages. There are 3 figures and 7 references, 6 of which are Soviet.

PRESENTED: March 27, 1958, by A.A.Lebedev, Member, Academy of Sciences,
USSR

SUBMITTED: March 21, 1958

1. Molecules--Vibration 2. Vibration--Measurement 3. Spectrum
analyzers--Performance

Card 3/3

SCV/51-7-1-15/27

24(7)

AUTHORS: Slobodskaya, P.V. and Gasilevich, Ye.S.

TITLE: Development of a Method of Determining the Relaxation Time of the Vibrational State of Molecules Using a Spectrophone. (Razvitiye metoda opredeleniya vremeni relaksatsii kolebatel'nogo sostoyaniya molekul s pomoshch'yu spektrofona). I. Derivation of a More Accurate Dependence Between the Measured Phase-Shift and the Relaxation Time. (I. Utochneniye zavisimosti mezhdu izmereniyem sdvigom fazы i vremenem relaksatsii.)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 97-104 (USSR)

ABSTRACT: The authors describe apparatus which employs a Veyngerev spectrophone (an optico-acoustic receiver, described in Ref 2) in measurement of the relaxation time of a particular type of vibration. The apparatus is shown schematically in Fig 1. A rotating disk (5) modulates light from two sources 7 and 8 at the same interruption frequency ω . The light signal from 7 acts on a photoelement 9; it is amplified and reaches a synchronous detector 1. The light signal from 8 passes through a monochromator 11 as well as an optico-acoustic receiver 6; this signal, after amplification, also reaches the detector 1. If the two signals reaching the detector are 90° out of phase, a galvanometer 8 indicates zero. Introduction of a gas into the optico-acoustic receiver 6 disturbs

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DCV/51-7-1-15/27

Development of a Method of Determining the Relaxation Time of the Vibrational State
of Molecules Using a Spectrophone. I. Derivation of a More Accurate Dependence
Between the Measured Phase-Shift and the Relaxation Time.

the null condition and the photoelement has to be moved along the
rotating disk perimeter to bring the galvanometer back to the zero
reading. The displacement of the photoelement gives the phase-shift Ψ
due to the gas in the optico-acoustic receiver. This phase-shift is
related to the vibrational relaxation time τ by (5)

$\tan \Psi = \omega \tau$

where ω is the frequency of interruption of both light signals. To
obtain the value of Ψ , allowance must be made for the phase-shifts
due to thermal inertia of the gas studied, acoustical properties of a
microphone used to detect vibrations in the optico-acoustic receiver,
inertia of the photoelement and other causes. The apparatus was used
to measure the relaxation time of CO_2 (mixed with various amounts of
nitrogen) using the 2.7 and 4.3 μ absorption bands. The light was
interrupted at 250, 600, 2000 c/s (2.7 and 4.3 μ bands) and 1100 c/s
(4.3 μ band). The relationship given by Eq (5) was confirmed for the
4.3 μ band; the 2.7 μ band results were affected by the presence of

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SOV/51-7-1-15/27

Development of a Method of Determining the Relaxation Time of the Vibrational State of Molecules Using a Spectrophone. I. Derivation of a More Accurate Dependence Between the Measured Phase-Shift and the Relaxation Time

water vapour, which also absorbs at 2.7 μ . The results are shown graphically in Figs 2-5. There are 5 figures and 11 references, 10 of which are Soviet and 1 English

SUBMITTED: August 2, 1958

Card 3/3

24(7), 5(1)

RGV/51-7-1-16/27

AUTHORS: Gerlovin, Ya.I. and Slobodskaya, P.V.

TITLE: Increase of the Sensitivity of the Optico-Acoustic Method of Gas Analysis by the Use of Cells with Multiple Passage of Radiation (Povysheniye chuvstvitel'nosti optiko-akusticheskogo metoda gazovogo analiza putem primeneniya kyvet s mnogokratnym prokhodneniyem radiatsii)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 105-112 (USSR)

ABSTRACT: The authors discuss an optico-acoustic gas analyser with multiple-passage cells (Fig 1). The main components of the analyser are a working cell (1), a comparison cell (3), a rotating disk with apertures (4), an optico-acoustic receiver (2), an amplifier (9) and a detector (10). The working cell (1) was filled with a mixture of (i) a gas exhibiting no optical absorption in the range of wavelengths $\Delta\lambda$ and (ii) a gas absorbing in the range $\Delta\lambda$ (it is required to find the amount of the absorbing gas in the working cell). The comparison cell (3) was filled with a non-absorbing gas, which might contain a known amount of the absorbing gas. The optico-acoustic receiver (2) was filled with the absorbing gas. Light proceeded from a source (5) via two mirrors (6, 7) to both cells. In each cell light was reflected to and from (4-52 times) between mirrors I, II and III until it emerged via slits 8.

Card 1/3

100-14047-27

Increase of the Sensitivity of the Optico-Acoustic Method of Gas Analysis by the Use of Cells with Multiple Passage of Radiation

The light beams from both cells were modulated by $\pi/2$ and in such a way that a phase-shift of 180° was introduced between them. Under such conditions the detector M indicated zero when the densities of the absorbing gas in both cells were equal. When the densities were unequal, the detector indicated the difference ΔS between the signals from the two cells. The authors show that the value of ΔS first increases with increase of N, the number of passages of the light beam in either of the cells, but on further increase of N the value of ΔS falls to zero. The sensitivity of the analyser (defined as the concentration of the absorbing gas at which the signal ΔS is twice as high as the noise level) is shown to increase linearly with the number of passages N. Since the light losses due to reflection at the mirrors I-III and due to astigmatism of the beams become greater with increase of N, there is an optimum value of N; for a particular analyser considered by the authors, the optimum

Card 2/3

1-7-1-16/27
Increase of the Sensitivity of the Gravimetric Method of Ato Analysis by the
Use of Cells with Multiple Passages of Radiation

value of N was 24. The sensitivity increase is proportional to the
of the amount of the radiation in the radiation field. There
are 4 figures and 7 tables, 6 of which are in English.

SUBMITTED: August 3, 1968

Card 3/3

24(4)

AUTHORS:

Gerlovin, Ya. I., Slobodskaya, P. V.

SOV/32-25-3-18/62

TITLE:

Increase of the Sensitivity of the Opto-acoustical Method of Gas Analysis by Using Bulbs With a Repeated Passage of Rays
(Povysheniye chuvstvitel'nosti optiko-akusticheskogo metoda gazovogo analiza putem primeneniya kyuvet s mnogokratnym prokhozhdeniyem radiatsii)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 303-304 (USSR)

ABSTRACT:

A lecture on this investigation was given at the XII Vsesoyuznoye soveshchaniye po spektroskopii (Twelfth All Union Conference of Spectroscopy) in Moscow in November 1958. An opto-acoustical gas analyzer was constructed and tested. The apparatus contains bulbs according to the scheme (Ref 3) and serves for analyzing small amounts of gas following the principle of infra-red rays absorption. The sensitivity of the apparatus depends on the rule governing the ray-absorption in the substance to be investigated. It was found that the most rational application is at such a degree of concentration at which absorption in the bulbs follows the linear law. The limit of sensitivity for analyses of nitrogen on CO₂ admixtures is at 2·10⁻⁵% CO₂. This value was found

Card 1/2

SOV/32-25-3-18/62

Increase of the Sensitivity of the Opto-acoustical Method of Gas Analysis by
Using Bulbs With a Repeated Passage of Rays

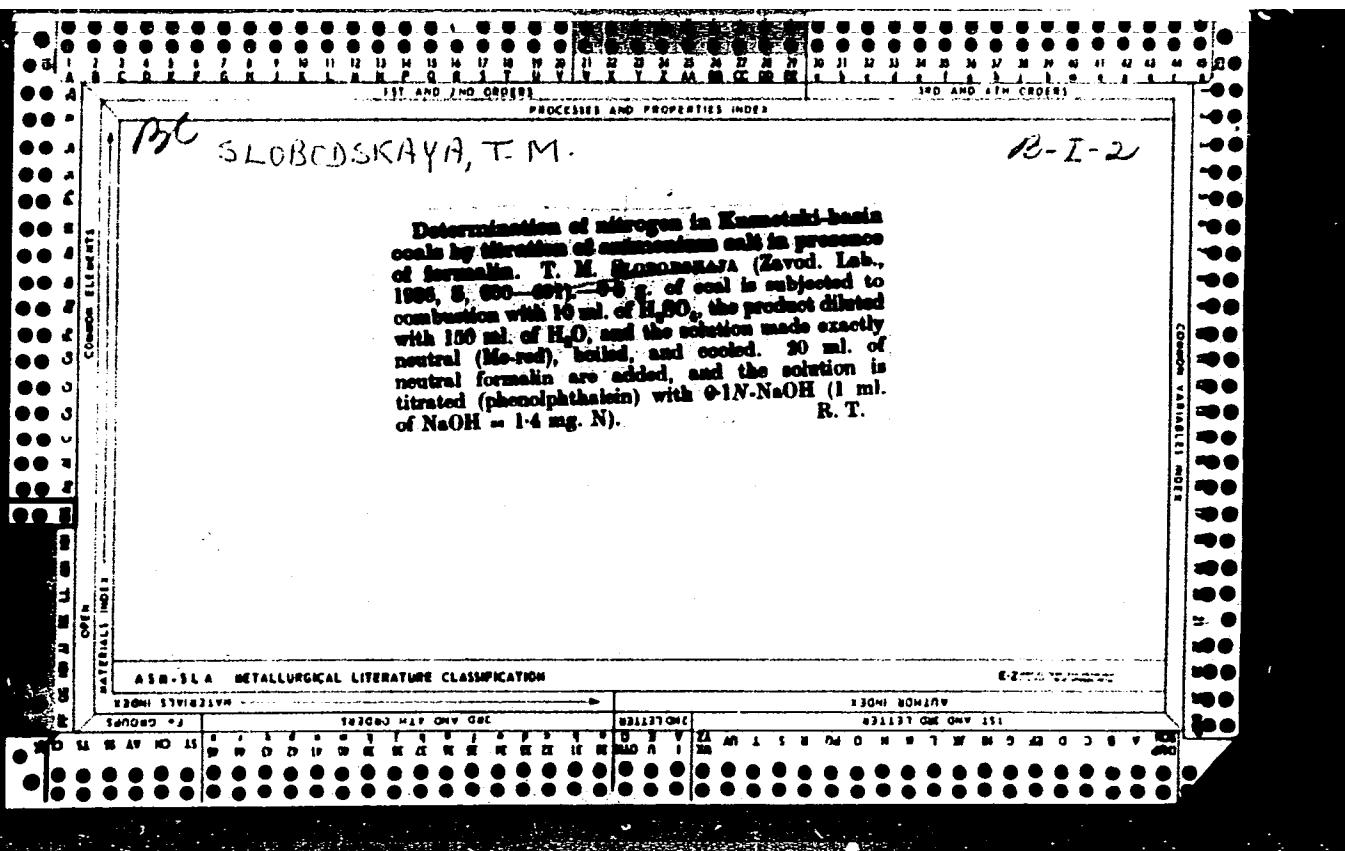
with a width of 50 cycles of the transmission band of the amplifying unit which corresponds to a time constant of $5 \cdot 10^{-3}$ seconds. If the latter is increased to 5 seconds the above value changes to $7 \cdot 10^{-7}\%$. With a corresponding change of the design of the bulb the compression of the mixture to be analyzed leads to an increase in the sensitivity of the gas analyzer, proportionally to the increase in pressure. There are 3 references, 2 of which are Soviet.

Card 2/2

KUDENKO, I.D.; RAIGORODETSAYA, Ye.A.; SLOBODSKAYA, R.A.

Application of high frequency electric current in the treatment of
ascariasis and trichocephaliasis; first communication. Sovet. med.
No. 2:36-37 Feb 52. (CIML 21:5)

1. Of the Therapeutic Hospital of Frunzenskiy Rayon and of the Physio-
therapeutic Polyclinic, Moscow.



APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001651330005-7"

Utilizing the sodium bicarbonate of natural waters in
water softening, based on the principle of mixing, soda-
lime method and by softening with caustic soda. T. M.
Slobodskaya (Hydrochem. Inst., Novocherkassk). *Gidro-
khim. Materialy* (Hydrochem. Materials) 14, 115 21/1948
S. presents a scheme of mixing waters from two sources

for the purpose of water softening, utilizing the reagents
present in the respective waters. The scheme is especially
effective when one source of the water has a definite hard-
ness and the other source has an excess of alkyl. In this
manner one may calc., from the data on these waters, how
much $\text{Ca}(\text{OH})_2$ one has to add.

J. S. Joffe

SLOBODSKAYA, T.N.

Geochemical characteristics of Paleozoic sediments in the Kuznetsk
Basin based on key-well drilling data. Avtoref. nauch. trud. VNIGRI
no.17:64-67 '56. (MIRA 11:6)
(Kuznetsk Basin--Petroleum geology)

DUROV, S.A., professor, doktor khimicheskikh nauk; SLOBODSKAYA, T.M.,
nauchnyy sotrudnik

Use of the geometric method in solving the problem of the
diagenesis of gypsum-bearing strata. Trudy MPI 47:
151-157 '58. (MIRA 13:5)

1. Novocherkasskiy ordena Trudovogo Krasnogo Znameni
politekhnicheskiy institut imeni Sergo Ordzhonikidze;
kafedra neorganicheskoy i organicheskoy khimii (for Durov).
2. Sibirskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
geologo-razvedochnogo instituta (for Slobodskaya).
(Geochemistry) (Water--Analysis)
(Gypsum)

SLOBODSKAYA, T.M.

Water extractions from rocks of the Yermakovsk Well in the Kuznetsk Basin and the results of their study from the geological viewpoint. Trudy VNIGRI no.124:203-210 '58. (MIRA 16:7)

(Kuznetsk Basin--Rocks--Analysis)

SLOBODSKAYA, Viktoriya Aleksandrovna; BOKHAN, K.A., nauchn. red.;
KUZNETSOVA, L.G., red.

[Short course in higher mathematics] Kratkii kurs vysshei
matematiki. Podol'sk, Vysshiaia shkola, 1963. 495 p.
(MIRA 17:9)

SLOBODSKAYA, V.P.; PASYNSKIY, A.G.

Dependence of enzyme activity on concentration with regard to their behavior in coacervates. Dokl. AN SSSR 137 no.3:715-718 Mr '61.
(MIRA 14:2)

1. Institut biokhimii im. A.N.Bakha AN SSSR. Predstavлено академиком
A.I.Oparinym. (ENZYMES) (COACERVATES)

PASYNSKIY, A.G.; SLOBODSKAYA, V.P.

Dynamic stability of enzymatic coacervates in substrate solutions.
Dokl. AN SSSR 153 no.2:473-476 N '63. (MIRA 16:12)

1. Institut biokhimii im. A.N.Bakha AN SSSR. Predstavлено академиком
A.I.Oparinym.

1. SLOBODSKYI, A. L., PROF.
2. USS^t (600)
4. Blood - Transfusion
7. "Blood transfusion." Reviewed by Prof. A. L. Slobodskiy. Khirurgija no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

L 47197-66 IWI I/I/FMP(t)/FIL IJP(c) DJ/JD

ACC NR: AR 6022 2 SOURCE CODE: UR/0276/66/000/002/B031/B031

AUTHOR: Slobodyanskiy, B. G.; Prudviblokh, I. A.; Bespalov, K. L.

TITLE: Automatic device for controlling the quality of hardening of roller
bearings

SOURCE: Ref. zh. Tekhn mashinostr, Abs. 2B241

REF SOURCE: Avtomatiz. proizv. protsessov v mashinostr. i priborostr.
Mezhved. resp. nauchno-tekhn sb., vyp. 1, 1965, 87-91

TOPIC TAGS: roller bearings, hardening, reversible permeability, quality control

ABSTRACT: An experimental model of an AKT-0361 automatic device has been built at the experimental laboratory of the L'vov Polytechnic Institute for controlling and sorting steel rollers according to the quality of hardening. The essence of the method is shown for controlling the structure of steel parts by their reversible permeability. The description, general shape and block diagram of the device, which operates according to the principle described, are given. The results of an investigation of the automatic device are presented. Orig. art. has: 2 figures.

[Translation of abstract]

[NT]

SUB CODE: 13/
Card 1/1 pg

UDC: 621.785.6:658.562.6.002.5

SLOBODSKIY, M. I.

Divisibility of Numbers

Divisors of numbers of the type $2^0 \neq 1$. Mat. v shkole no. 1, 1953.

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

WILLIAMS, Howel; TURNER, F.J.; GILBERT, Ch.M.; VARENTSOV, I.M. [translator];
SLOBODSKIY, N.I. [translator]; PETROV, V.P., red.

[Petrography; an introduction to the study of rocks in thin
sections] Petrografiia; vvedenie v izuchenie gornykh porod v
shlifakh. Moskva, Izd-vo inostr.lit-ry, 1957. 425 p.
Translated from the English. (MIRA 13:6)
(Petrology)

CHIZHIKOV, D.M.; SLOBODSKIY, Ya.Ya.; TSVETKOV, Yu.V.

Catalytic action of zinc on the decomposition of carbon monoxide.
Dokl. AN SSSR 115 no.3:586-587 J1 '57. (MIRA 10:10)

1. Chlen-korrespondent AN SSSR (for Chizhikov). 2. Institut
metallurgii im. A.A.Baykova AN SSSR.
(Carbon monoxide) (Catalysts)

SLOBODSKIY, Yu.Ya.; SHNEYDER, B.M.

Perforation of the ear drum caused by a living foreign body.
Zdrav. Bel. 7 no.6:63 Je '61. (MIR 15:2)

1. Iz otorinolaringologicheskogo otdeleniya (zaveduyushchiy B.M.
Shneyder) Grodenskoy oblastnoy bol'nitsy (glavnnyy vrach S.G.Dulayev).
(EAR FOREIGN BODIES)
(TYPANIC MEMBRANE WOUNDS AND INJURIES)

SLOBODSKOV, B.A.

Short quizzes in physics. Fiz.v shkole 23 no.1:87 Ja-F '63.
(MIRA 16:4)

1. 36-ya shkola, Tula.

(Physics—Problems, exercises, etc.)

SLOBODSKOY, A. L.

124. Handbook on Blood Transfusion Published

Spravochnik Po Perelivaniyu Krovi (Handbook on Blood Transfusion), by Prof A. L. Slobodskoy, Medgiz, Kiev, 1949, 68 pp

This booklet discusses blood groups, mechanism of the effect of transfused blood, indications and contraindications for blood transfusion, methods of blood transfusion, general rules for blood transfusion, transfusion of preserved blood, drip-transfusion method, technique for blood transfusion in children, and management of patients suffering from complications resulting from blood transfusion.

Sum 1239

SLOBODSKOY, A. L.

Slobodskoy, A. L. - "On the combined complications of chronic stomach ulcer with acute hemorrhage and perforation," In the symposium: V. N. Shamov, Kiev, 1949, p. 271-75

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

SLOBODSKOY, A.L. Prof. (Khar'kov)

Review of Perelivanie krov'i [Blood Transfusion] edited by A. A. Bagdasarov and A. V. Gulyayev. Medgiz, 1951. 583 pages. 109 drawings. In Khirurgiya, No. 10, Oct. 1952, pp. 82-85. (CLML 23:3)

SLOBODSKOIY, A. L.

USSR/Medicine - Blood Transfusion Jul/Aug 53

"Data on the Role of the Cerebral Cortex in the Pathogenesis of Reactions Occurring as a Result of Transfusion of Blood of Another Type," Prof A. L. Slobodskoiy, Sr Sci Assoc R. M. Glants, M. P. Brusnitsyna, V. P. Verbitskiy, Ukr Sci-Res Inst of Blood Transfusion, Ukr Inst for the Advanced Training of Physicians

Vest Khirurg, Vol 73, No 4, pp 9-13

Attributes severe post-transfusion reactions produced by blood of another type to changes in the dynamics of cortical processes. Assumes that

272P23

a lessening of such reactions is closely connected with reinforcement of protective inhibitions of the cerebral cortex. Advocates the preliminary use of medicinal therapeutic sleep or intravenous injections of sodium bromide to allay, or even prevent, such reactions.

KOMAROV, N.S., professor; SLOBODSKOY, B.I., redaktor.

[Artificial cold] Iakusatvennyi kholez. Izd. 2, perer. i dep.
Moskva, Gos.izd-ve tekhniko-teoret. lit-ry, 1953. 55 p.
(Nauchno-populiarnaya biblioteka, no.67) (MLRA 7:7)
(Ice-Manufacture)

UVOROV, S.G.; SLOBODSKOY, B.I., redakter.

[What the ray of light tells us] O chem govorit luch sveta. Izd.
3-e. Moskva, Gos. izd-vo tekhnike-teoreticheskoi lit-ry, 1953. 62 p.
(Nauchno-populiarnaya biblioteka, no.35) (MIRA 7:7)
(Light)

POGUMIRSKIY, A.I., kandidat tekhnicheskikh nauk; KAVERIN, B.P., kandidat tekhnicheskikh nauk; SLOBODSKOY, B.I., redaktor; AKHILAMOV, S.N., tekhnicheskiy redaktor.

[Industrial drawing] Proizvodstvennyi chertezh. Izd. 2-e. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1953. 70 p. (Nauchno-populiarnaia biblioteka, no.26) (MLRA 7:12)
(Design, Industrial) (Mechanical drawing)

VSEKHSVYATSKIY, S.K., professor; SLOBODSKOY, B.I., redaktor; KAT-
RENKO, D.A., redaktor.

[How the universe became known] Kak poznavalas' vselennaia.
Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 62 p.
(Nauchno-populiarnaia biblioteka, no.68) (MLRA 7:8)
(Astronomy--History)

SLOBODSKOY, L. I.

USSR/Physics - Magnetism
Anisotropy

11 Dec 49

"Calculation of the Second Constant of Magnetic Anisotropy by Approximation to Saturation," L. V. Kirenskiy, L. I. Slobodskoy, Krasnoyarsk Pedagogical Inst, Krasnoyarsk, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 5

Intensity I of magnetization for strong magnetic fields of strength H can be expressed thus: $I = I_0(1-a/H-b/H^2-c/H^3) + \chi_p H$ (for given temperature) where I_0 is the intensity of spontaneous magnetization, χ_p is the susceptibility of the para-process, and the coefficient a depends on plastic deformation. This work deals with theoretical calculation of the coefficients b and c as functions of the second constant k_2 of magnetic anisotropy, in addition to the first energy constant k_1 , as given previously for only b . Constants of anisotropy depend essentially on temperature, e.g., in the case of nickel at low temperatures the term c/H^3 becomes important because of the strong increase in k_1 with decreasing temperatures. Submitted by Acad D. V. Skobel'tsyn

21 Sep 49.

PA 152T91

SLOBODSKOI, L. I.

USSR/Physics-Magnetism

11 Feb 50

"Influence of Elastic Diffuse Stresses Upon the Law of Approximation to Saturation," L. V. Kirenskiy, L. I. Slobodskoy, Krasnoyarsk Pedagogical Inst

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 809-811

Derives expression for constant c in equation for magnetization intensity $I = I_0(1-a/h-b/H^2-c/H^3) + X_p H$, where I_0 is spontaneous magnetization, X_p is susceptibility of para-process, a is constant depending on degree of plastic deformation, and neither constants of anisotropy nor mean stresses enter into a explicitly. In expression derived, c is function only of constants of anisotropy, mean stress, and magnetostriction under saturation in directions (100) and (111). Constant c depends very strongly on mean stress. In nickel at room temperature, e.g., term in expansion for c determined by internal stresses may exceed remaining members by more than one order. Thus, if sign of magnetostriction is known, sign of average stresses can be determined, and vice versa. Submitted 14 Dec 49 by Acad S. I. Vavilov.

PA 165T63

SLOBODSKOY, L. I.

PA 174T71

USSR/Physics - Magnetism

21 Sep 50

"Influence of Directed Stresses Upon the Behavior of the Magnetization Curve in Strong Fields," L. V. Kirenskiy, L. I. Slobodskoy, Krasnoyarsk Pedagogical Inst

"Dok Ak Nauk SSSR" Vol LXXIV, No 3, pp 457-459

Considers $I = I_s(1-a/H-b/H^2-c/H^3) - \chi H$. Math treatment in connection with calm of law governing approximation to saturation in presence of directed elastic stresses. Submitted 10 Jul 50 by Acad S. I. Vavilov.

174T71

24.2300 1144, 1147, 1482.

32228

S/196/61/000/011/007/042
E194/E155

AUTHORS: Kirenskiy, L.V., Sudakov, N.I., and Slobodskoy, L.I.
TITLE: Hysteresis loss as a function of temperature in rotating magnetic fields in crystals of silicon iron
PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, no.11, 1961, 2, abstract 11B 8. (Symposium "Magnetic structure of ferromagnetics", Novosibirsk, Sib. otd. AN SSSR, 1960, 61-71)

TEXT: Measurements with an improved Akulov anisometer showed that in the temperature range - 195 to + 400 °C the change in the shape of curves of magnetic moment with increase of field takes the same course as at room temperature. With increase of temperature the values of the moments decrease, maximum losses of rotational hysteresis being displaced towards stronger fields, from 550 oersted at - 195 °C to 1200 oersted at 500 °C.
7 literature references.

Card 1/2

32228

Hysteresis loss as a function of ...

S/196/61/000/011/007/042
E194/E155

ASSOCIATION: In-t fiziki SO AN SSSR; Pedagogich. in-t
Krasnoyarsk
(Physics Institute SO AS USSR; Pedagogical
Institute Krasnoyarsk)

[Abstractor's note: Complete translation.]

Card 2/2

88056

S/139/60/000/006/023/032
E032/E414

On the Calculation of Hysteresis Losses in Ferromagnetics

where α is a suitably chosen number and β , γ , δ and ϵ are positive. These parameters can be expressed in terms of the parameters of the hysteresis loop shown in Fig.1. Thus Eq.(1) must represent a curve passing through the points $(-H_c, 0)$, $(0, I_r)$, (H_s, I_s) and having an inflection on the H axis. In order to simplify the calculations, it is assumed that the curve in fact passes through $(-H_c, 0)$, $(0, I_r)$, has an inflection at $(-H_c, 0)$ and tends to the asymptote $I = I_s$, where $I_r = OB = OE$ in Fig.1. Subject to these conditions, it is shown that the ABC part of the curve can be represented by

$$\frac{I}{I_s} = -1_s + \frac{2I_s(I_s + I_r)}{I_s + I_r + (I_s - I_r)e^{-\alpha H}}. \quad (6)$$

Eq.
(6)

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88056

S/139/60/000/006/023/032
E032/E414

On the Calculation of Hysteresis Losses in Ferromagnetics

if $I_s - I_{II}$ is to be smaller than h .
There are 2 figures, 1 table and 2 references: 1 Soviet and
1 non-Soviet.

ASSOCIATION: Institut fiziki AN SSSR g. Krasnoyarsk
(Institute of Physics AS USSR, Krasnoyarsk)

SUBMITTED: October 21, 1959

Fig.1.

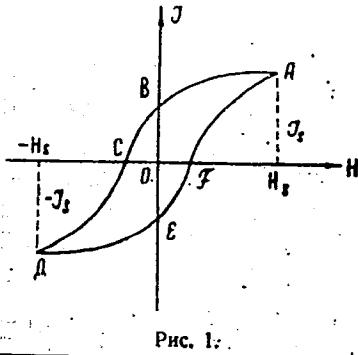


Рис. 1.

Card 4/4

ACC NR: AP6036050

SOURCE CODE: UR/0056/66/051/004/1023/4329

AUTHOR: Drokin, A. I.; Slobodskoy, L. I.

ORG: Institute of Physics, Siberian Department, Academy of Sciences SSSR (Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Concerning the temperature dependence of the magnetic anisotropy constants of ferromagnets and ferrites

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 4, 1966, 1023-1029

TOPIC TAGS: magnetic anisotropy, ferromagnetic material, ferrite, temperature dependence, spin wave theory, Curie point, spontaneous magnetization

ABSTRACT: The purpose of the investigation was to check experimentally the temperature dependence of the magnetic anisotropy constants, which was obtained theoretically by Turov and Mitsek (ZhETF v. 37, 1127, 1959) on the basis of a phenomenological spin-wave theory. The tests were made on nickel, iron, and several single-crystal ferrites with spinel structure (lithium pentaferite, manganese ferrite, and magnesium-manganese ferrite). The constant of the magnetic anisotropy was determined by a torque method described elsewhere (Izv. vuzov, Fizika no. 5, 162, 1965). In addition, to check the behavior of the magnetic anisotropy constant near the Curie point, the temperature dependence of the magnetic anisotropy was measured on single-crystal spinel-structure ferrites with compositions FeOFe_2O_3 , MnFe_2O_4 , $\text{Ni}_x\text{Fe}_{1-x}\text{Fe}_2\text{O}_4$ (several values of x),

Card 1/2

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